## REMARKS

Applicants thank the Examiner for the careful consideration given to this application and for the helpful interview conducted on July 22, 2010 (summarized below). Reconsideration is now respectfully requested in view of the amendment above and the following remarks.

Claims 1-7 and 9-46 are pending in this application. Claims 1, 15, 16, 20, 24, and 44 are independent claims. Claims 1-3, 9, 15-27, and 31 are amended. Claim 8 was previously cancelled without prejudice or disclaimer. New Claims 35-46 are added. Reconsideration and allowance of the present application are respectfully requested.

## Summary of Examiner Interview

As noted above, an interview was conducted on July 22, 2010, for which Applicants express their gratitude to the Examiner. This interview was conducted by telephone between Examiner Trang Doan and the undersigned. Examiner Doan requested further explanation about the independent claims, focusing on Claim 1. As a result of the discussion, Examiner Doan suggested amendments to the various independent claims. While no firm agreement was reached, Examiner Doan agreed to review any amended claims submitted and helpfully offered to contact the undersigned if further amendments would result in allowance, to help expedite prosecution of this application. Applicants thank the Examiner for her willingness to assist in this way.

## Claim Rejections Under 35 U.S.C. §103

Claims 1-7, 9-11, 13, 15-22 and 24-33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,382,969 to Dawson (hereinafter "Dawson") in view of U.S. Patent Publication No. 2004/0221192 to Motta et al. (hereinafter "Motta et al."), and in further view of U.S. Patent No. 6,606,095 to Lengyel et al. (hereinafter "Lengyel et al."). This rejection is respectfully traversed for at least the following reasons.

Claim 1, as amended, includes the recitation of:

analyzing the succession of frames of the original stream, using an analysis module, to generate a modified main stream and complementary information,

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wherein said analyzing comprises:

generating one or more sequences of pseudorandom values with known parameters,

extracting original data from the original stream and replacing extracted original data with replacement data as a function of the values of the one or more sequences of pseudorandom values, to produce a modified main stream, and

storing in the complementary information data associated with at least one of the sequences of pseudorandom values and at least some of the extracted original data;

separately forwarding the modified main stream and the complementary information to equipment at an addressee.

Claim 15, as amended, includes the recitation of:

analysis apparatus configured to analyze an original audiovisual stream for separation of the original audiovisual stream into a modified main stream and complementary information as a function of the analysis, where the analysis is based at least in part on at least one sequence of pseudorandom values, wherein the analysis comprises selecting data for extraction and replacement from the original audiovisual stream to obtain the modified main stream, and wherein the complementary information includes data extracted from the original audiovisual stream and data relating to the at least one sequence of pseudorandom values;

and

transmission apparatus configured to separately transmit the modified main stream and the complementary information to an addressee location, to enable reconstruction of the audiovisual stream as a function of the modified main stream and the complementary information.

Claim 16, as amended, includes the recitation of:

processing, in an analysis module, the original stream to generate sequences of pseudorandom values with known parameters, said processing including:

extracting original data as a function of the pseudorandom sequences;

generating a modified main stream, including substituting replacement data for original data extracted in said extracting, and complementary information, including at least a portion of the original data extracted in said extracting; and

storing at least one parameter from the processing in the complementary information; and

separately transmitting the modified main stream and the complementary information to an addressee to enable the addressee to synthesize a stream in the original format as a function of the modified main stream and the complementary information.

Claim 20, as amended, includes the recitation of:

A method for recreating an original audiovisual sequence according in an original stream format having a succession of frames, where said original stream is processed using sequences of pseudorandom values with known parameters to extract data from the original stream as a function of the pseudorandom sequences, to generate a modified main stream from the original stream subsequent to the extracting by substituting replacement data for data extracted from the original stream, to generate complementary information including at least some data extracted from the original stream, and to store at least one parameter from the processing in the complementary information, wherein the modified main stream and the complementary information are separately transmitted to a recipient location, the method comprising:

separately receiving the modified main stream and the complementary information at the recipient location; and

applying the modified main stream and the complementary information to a synthesis module to synthesize the original stream in the original format at the recipient location.

Finally, Claim 24, as amended, includes the recitation of:

analyzing the succession of frames of the original stream in an analysis unit configured to generate a modified main stream and complementary information, said analyzing comprising:

generating one or more sequences of pseudorandom values with known parameters,

extracting original data from the original stream, and replacing extracted original data with replacement data, as a function of the values of the one or more sequences of pseudorandom values, to produce a modified main stream, and

storing in the complementary information data associated with at least one of the sequences of pseudorandom values and at least some of the extracted original data; and

separately forwarding the modified main stream and the complementary information to equipment at an addressee.

Applicants respectfully submit that the cited references fail to support the rejections of these claims and their respective dependent claims for at least the following reasons.

While the independent claims are of varying scope, each of the independent claims includes, using the language of Claim 1, "extracting original data from the original stream and replacing extracted original data with replacement data as a function of the values of the one or more sequences of pseudorandom values, to produce a modified main stream," or some similar recitation(s). The claims also include (again, using the language of Claim 1 as an example), "separately forwarding the modified main stream and the complementary information to equipment at an addressee," or some similar recitation(s). The Office Action, at page 3, cites Dawson at col. 8, lines 35-44 and col. 4, line 50 to col. 5, line 15 as teaching these features (except that, according to the Office Action, "random" is used, instead of "pseudorandom"). Dawson at col. 8, lines 33-44 recites:

In an alternate embodiment, the macro blocks of censored content (e.g., extracted video signal content 405) may be extracted at random. According to such an embodiment, because the content of the block may constantly change, new data must constantly be sent through the user data channel. Stresses on bandwidth capacity caused thereby may be mitigated by such measures as skipping frames between and, controlling the position of and the interval between, extractions of otherwise randomly extracted blocks of video content.

Dawson at col. 8, lines 33-44. At col. 4, line 35 to col. 5, line 15 (which includes the cited portions), Dawson recites:

> FIG. 1 shows a transmitter/receiver network 100 that facilitates the communicating of video content from transmitter to receiver according to one embodiment of the present invention. According to exemplary embodiments, a program stream 105 that is transmitted by transmitter 101 is configured to facilitate the presentation of seamless video images on the display of a receiver 103 while allowing only marred versions of that content to be recorded using a VCR or DVD recorder. Embodiments of the present invention include a program stream 105 that is comprised of channels that carry video signals from which video images displayed in graphics overlay and video image planes (see FIGS. 3A, 301 and 303) of the images presented in display 107 are derived. FIG. 1 shows transmitter 101, receiver 103, display 107 and program stream 105.
>
> Transmitter 101 transmits a program stream 105 that includes multiple channels 105a and 105b that carry video signals from which video images displayed in both the graphics overlay memory plane and the video image memory plane (e.g., 301 and 303 FIG. 3) are derived and displayed (e.g., in 107). According to one embodiment of the present invention the graphics overlay (e.g., 301) and the video image (e.g., 303) memory planes may each contribute image portions to composite images that may be seamlessly presented in the receivers display 107 to                                                                                                     viewers.
>
> The components 105a of program stream 105 from which video images are derived that may be presented in the video image memory plane (e.g., 303 FIG. 3) may be extracted from a video signal (e.g., 201 FIG. 2) and replaced with marred content. The extracted (e.g., censored) video signal portions may then be transmitted in a channel 105b (e.g., user data channel) of the program stream 105 that carries video signals from which video images presented in the graphics overlay memory plane are derived. It should be appreciated that video images

displayed in the graphics overlay memory plane may be synchronized with video images that may be displayed in the video image memory plane. As a result, composite images that include image portions that may be attributable to both the graphics overlay and the video image memory plane may be seamlessly presented on the display 107 of receiver 103 for viewing. This is the case because graphics overlay data takes display priority over the marred images. However, only the video signal portions of video signal containing the marred content may be recorded by a DVD or VCR 110. This is the case because only video signal portions corresponding to images shown in the video image plane are supplied to the DVD or VCR 110 over channel 115.

Dawson at col. 4, line 35 to col. 5, line 15. Note that this portion of Dawson is presented in conjunction with Figs. 1-3 ("Fig. 3" referring to Figs. 3A and 3B). The Office Action at page 3 also refers to Dawson at col. 5, line 56 to col. 6, line 10, which recites:

Video signal 201 is transmitted to analog to digital converter 209 and digitized. The digitized signal is then transmitted to and processed by encoder 219, e.g., an MPEG encoder. The encoder 219 identifies video content in the video signal suitable to be extracted. According to one embodiment, the encoder 219 monitors the video signal 201 for components of the video signal that have associated motion vectors as a part of this identification process (see FIG. 7 discussion). The video signal content that is identified is extracted and replaced with marred video content. The extracted video signal content and the video signal (e.g., 201) portions that contain marred video content are configured by the encoder 219 to be transmitted in separate channels of a highly-compressed program stream (e.g., 105). Encoder 219 communicates the signal to transmitter 221 for transmission to a receiver (e.g., 103). The transmission medium can be radio, cable satellite etc. It is appreciated that almost any video pattern or image can be used as the marred image as long as it makes viewing the content undesirable to the viewer. In one example, it could be blanked out with a solid color or a fixed pattern, or random noise could be used, or some other type of image artifact could be used.

Dawson at col. 5, line 56 to col. 6, line 10. Note that this section of Dawson also refers to various features shown in Figs. 1 and 2.

While the cited portion of col. 8 of Dawson, includes, "the macro blocks of censored content (e.g., extracted video signal content 405) may be extracted at random," it is important to understand this in the context of the other cited portions (i.e., the rest of Dawson). A consequence of choosing portions to extract at random is that the receiver needs to know from where the portions were extracted. This is accomplished in Dawson by means of the fact that the extracted portions (i.e., the "graphics overlay data") and the image data from which the extracted portions were removed and replaced (i.e., the "video image") *are provided to the user together, not separately, as claimed.* This is shown in Fig. 1 of Dawson, where the two types of data, denoted 105a and 105b, are transmitted as part of a common stream, 105; see, e.g., Dawson at col. 4, lines 50-59 (quoted above). If Dawson were to attempt to use random selection of extracted data and to transmit it separately from the image data from which the data was extracted, this would present a problem in that Dawson does not include any provision for coordinating with the receiver where to place the extracted data. Hence, Dawson fails to teach the extraction/replacement of data at random (or pseudorandomly) in a system/method in which the "modified stream" and the "complementary information" are transmitted *separately*.

At page 3, the Office Action further cites Motta et al. at paragraph 30, specifically as allegedly disclosing "the generating, extracting, and storing steps using pseudorandom values." Office Action at 3. Paragraph 30 of Motta et al. reads as follows:

> [0030] In step 1004, the iteration variable k is set to 1. The iteration variable k tracks the number of times an inner loop of the LBG algorithm is executed. Then, in step 1006, the LBG algorithm selects an initial set of N n-dimensional vectors J as an initial codebook. Selection of the initial codebook can be undertaken in various different ways. One approach is to use a randomly generated set of vectors. In one random-generation approach, the index of a partition is used as the seed for a pseudorandom number generator that produces appropriately sized and appropriately distributed pseudorandom vectors. An advantage of this approach is that the codewords need not be stored. Instead, the indexes extracted from a compressed table can be input, as seeds, into the same pseudorandom number

generator in order to recover the corresponding codewords. Another approach is
to place each input vector into its own partition, and then coalesce partitions that
are close together, in a pair-wise fashion, until an acceptably small number of
partitions are generated, using the centroid vector of each partition as a codeword.
A metric for closeness may be based on a sum of Euclidian distances, or may be
based on alternative distance metrics. A third approach is to compute a centroid
for the input vector space, use the centroid for a first codeword, and then perturb
that centroid systematically to generate the remaining codewords for the initial
codebook.

Motta et al. at paragraph 30. Applicants respectfully note that, while this passage of Motta et al.
refers to "[s]election of the initial codebook...[using] a randomly generated set of vectors,"
which may be implemented using a pseudorandom number generator to select the vectors, this
does not address the above-mentioned deficiencies of Dawson. Applicants further submit that
Motta et al. relates to a different art (data compression) from that of Dawson, and therefore, one
of ordinary skill in the art would not have turned to Motta et al. to provide teachings that could
be combined with Dawson. Finally, if Dawson taught "random" selection, using pseudorandom
number generation, as in Motta et al., provides no further contribution "to secure a transmission
in a public communication network," as is stated at page 3 of the Office Action as providing a
motivation to combine these references; hence, the Office Action has failed to present a *prima
facie* case of obviousness.

The Office Action also cites Lengyel et al. However, Applicants have not found any
teachings or suggestions in Lengyel et al. that would address the deficiencies with respect to the
other cited references.

Hence, Applicants respectfully submit that, for at least these reasons, the cited references
fail to support the rejections of independent Claims 1, 15, 16, 20, and 24, or of their respective
dependent claims.

While the claims depending from each of these independent claims are allowable for at
least the above reasons, Applicants have further reasons for which it is respectfully submitted
that various ones of the dependent claims are further allowable over the cited references. In
particular:

- Claims 2, 3, 18, 25, and 26: These claims refer to what may be stored in the complementary information. Claims 2 and 25 recite, "all the data comprising the sequences of pseudorandom values and the extracted original data," while Claims 3 and 26 recite, "some of the data comprising the sequences of pseudorandom values and the extracted original data." Claim 18 recites, "at least some of said extracted original data and at least one sequence of said pseudorandom values." The Office Action, noting page 4, cites Dawson at col. 5, lines 25-27 and col. 7, lines 35-40 as allegedly teaching these additional features in Claims 2, 3, 25, and 26, and at page 6 cites Dawson at col. 8, lines 35-44. The cited portion of col. 5 merely states, "Only the program stream components that contain marred content may be recorded by a DVD recorder or VCR 110." Dawson at col. 5, lines 25-27. The cited portion of col. 7 contains similar recitations. Dawson at col. 8, lines 35-44 is quoted above. Applicants do not see any connection between what is recited in these portions and what is stored in the complementary information according to these various claims and have found no other portions of any of the cited references that teach the claimed subject matter. Hence, for at least these further reasons, Applicants respectfully submit that the cited references fail to support rejections of Claims 2, 3, 18, 25, and 26.

- Claims 9 and 31: Claims 9 and 31 relate to "generating one or more sequences includes generating one or more sequences based on at least one characteristic of the analyzing," using the language of Claim 9 as an example (Claim 31, although of different scope, contains similar recitations). The Office Action at page 5 cites Dawson at col. 9, lines 26-62 in connection with Claims 9 and 31. This portion of Dawson                    recites                    the                    following:

  As discussed with reference to FIGS. 1-5, embodiments of the present invention facilitate the prevention of video content copying. FIG. 6A is a flowchart 600 of the steps performed in a process for transmitting data useful in preventing the copying of video content according to one embodiment of the present invention.

  At step 601, portions of a video signal (e.g., 201) suitable for censoring are

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identified and are extracted at step 603. The extracted video signal content (e.g., 405) corresponds to blocks of pixels. According to one embodiment these blocks of pixels may be macro blocks of content (such as MPEG macro blocks) that are associated         with         well         known         motion         vectors.

At step 605, the extracted video signal content (e.g., 405) is replaced with marred video content. This marred video content (e.g., 407) may include any image that is undesirable to view, e.g., solid black, patterned or other solid color blocks of video content. The resultant video images presented on the display of a receiver may be marred by these blocks that obscure portions of the displayed video image.

At step 607, the extracted video signal content (e.g., censored content) is placed in a user data channel 105b and synchronized with the video signal components 105a that contain marred video content (e.g., 407). The censored content is transferred through the user data channel to be shown in the graphics overlay plane         (e.g.,         403)         of         the         displayed         images.

At step 609, the video signal components that contain marred video content (e.g., 407), and the extracted video content (e.g., censored content 405) are transmitted in separate channels to a receiver for synchronized presentation to viewers. The synchronized video portions together present a seamless composite image as generated according to FIG. 6B below. As a result, the portions of the video image that may be attributable to the video image plane and to the graphics overlay         plane         may         not         be         distinguishable         by         viewers.

Dawson at col. 9, lines 26-62. Applicants, however, are unable to understand how this relates to "generating data," as previously claimed (namely, referring to Claim 1 prior to amendment, for example, "generating data comprising sequences of pseudorandom values with known parameters") or to the present "generating

one or more sequences of pseudorandom values," as now claimed. Therefore, Applicants respectfully submit that the Office Action fails to provide a *prima facie* case of obviousness of these claims.

- Claims 10 and 32: Claims 10 and 32 relate to "storing one or more parameters related to the generating as a result of the analyzing." The Office Action at page 5 cites Dawson at col. 7, lines 11-17 in connection with Claims 10 and 32. This portion of Dawson recites, "According to one embodiment of the present invention, only components of the program stream that contain marred video content 307 may be recorded by a VCR or DVD recorder (e.g., via output 115). Accordingly, the schematic of FIG. 3B represents the content that may be reproduced from a VCR or DVD recording. It is appreciated that one or more marred regions may be placed in a frame." Dawson at col. 7, lines 11-17. Applicants find no relationship between this portion of Dawson and the claimed subject matter and have found no such teachings in the cited references. Therefore, it is respectfully submitted that the Office Action has not presented support for the rejection of these claims.

- Claim 13: Claim 13 recites, "wherein the synthesizing includes using said data reproducing the pseudorandom values obtained during the analyzing." The Office Action at page 6, cites Dawson at col. 10, lines 3-29 as providing teachings relating to the claimed subject matter. Applicants have reviewed this portion of Dawson and have found no mention of any use of "data reproducing the pseudorandom values," as claimed, and have not found any such teachings in any of the cited references. Therefore, for these further reasons, Applicants respectfully submit that the cited references fail to support the rejection of Claim 13.

- Claims 17-19: Claim 17 depends from Claim 15 and recites, "wherein the analysis apparatus includes: a generator to generate the at least one sequence of pseudorandom values, and an extractor responsive a sequence of pseudorandom values for extracting original data from original audiovisual sequences to produce said modified main stream and said complementary information." Claims 18 and 19 depend from Claim 17. The Office Action at page 6 cites Dawson at col. 5, lines 30-33 and col. 4, lines 60-67 as allegedly teaching the subject matter of Claim 17. Applicants have reviewed these

portions of Dawson and respectfully submit that they fail to teach or suggest at least "a generator to generate the at least one sequence of pseudorandom values," as claimed. Hence, Applicants respectfully submit that the rejections of Claims 17-19 are not supported by the cited references for at least these further reasons.

Therefore, Applicants respectfully request that this rejection of Claims 1-7, 9-11, 13, 15-22 and 24-33 under 35 U.S.C. §103 be withdrawn.


Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Dawson in view of Motta et al., in view of Lengyel et al., and in further view of U.S. Patent Publication No. 2003/0177142 to Ferris (hereinafter "Ferris"). This rejection is respectfully traversed for at least the following reasons.

Claim 14 depends from Claim 1. Hence, the above discussion with respect to Claim 1 also applies to Claim 14. Furthermore, Applicants have found no teachings or suggestions in Ferris that would address the above-cited deficiencies of the other cited references and thus submit that the cited references fail to support a rejection of Claim 14.

Therefore, Applicants respectfully request that this rejection of Claim 14 under 35 U.S.C. §103 be withdrawn.


Claims 12, 23 and 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dawson in view of Motta et al., in view of Lengyel et al., and in further view of U.S. Patent Publication No. 2005/0139657 to Hopkins (hereinafter "Hopkins"). This rejection is respectfully traversed for at least the following reasons.

Claim 12 depends from Claim 1, Claim 23 depends from Claim 22, which depends from Claim 20, and Claim 34 depends from Claim 24. Hence, the above discussion with respect to Claims 1, 20, and 24 also applies to Claims 12, 23, and 34. Furthermore, Applicants have found no teachings or suggestions in Hopkins that would address the above-cited deficiencies of the other cited references and thus submit that the cited references fail to support rejections of Claims 12, 23, and 34.

Therefore, Applicants respectfully request that this rejection of Claims 12, 23 and 34 under 35 U.S.C. §103 be withdrawn.

## New Claims

New Claims 35-46 have been added. It is respectfully submitted that these claims find support in the specification as filed, e.g., at paragraphs 50-54. Claims 35-43 depend from various claims treated in the above discussion, and therefore, the arguments presented above are also applicable to these claims. Applicants further note that they have not found support for rejections of any of these new claims in any of the cited references, either alone or in combination.

## Disclaimer

Applicants may not have presented all possible arguments or have refuted the characterizations of either the claims or the prior art as found in the Office Action. However, the lack of such arguments or refutations is not intended to act as a waiver of such arguments or as concurrence with such characterizations.

## CONCLUSION

In view of the above, consideration and allowance are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 22-0185.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 27592-01115-US from which the undersigned is authorized to draw.

Dated:  September 27, 2010                  Respectfully submitted,


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